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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,052	08/19/2003	Arthur M. Krieg	C1037.70048US00	4791

23628 7590 06/04/2008

WOLF GREENFIELD & SACKS, P.C.
600 ATLANTIC AVENUE
BOSTON, MA 02210-2206

EXAMINER	
ARCHIE, NINA	

ART UNIT	PAPER NUMBER
1645	

MAIL DATE	DELIVERY MODE
06/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/644,052	KRIEG ET AL.	
	Examiner	Art Unit	
	Nina A. Archie	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/17/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5, 12-17, 22-28, 32, 36, 39, 44, 46, 48-49, 66-67, 70, 88, 94-100* is/are pending in the application.

4a) Of the above claim(s) *3-5,13,15,23,25,28,32,36,39,46,48,70,88 and 94-99* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *Claims 1-2, 12, 14, 16-17, 22, 24, 26-27, 44, 49, 66-67, 97-98, and 100* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/2/2007, 2/4/2008, and 4/11/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are Claims 1-2, 12, 14, 16-17, 22, 24, 26-27, 44, 49, 66-67, 97-98, and 100 .

DETAILED ACTION

1. This Office is responsive to Applicant's amendment and response filed 12-17-07. Claims 1-5, 12-17, 22-28, 32, 36, 39, 44, 46, 48-49, 66-67, 70, 88, 94-100 are pending. Claims 3-5, 13, 15, 23, 25, 28, 32, 36, 39, 46, 48, 70, 88, and 94-99 are withdrawn Claims 6-11, 18-21, 29-31, 33-35, 37-38, 40-43, 45, 47, 50-65, 68-69, 71-87, and 89-93 are cancelled.

Information Disclosure Statement

2. The information disclosure statement filed on 8/2/2007, 2/4/2008, and 4/11/2008 has been considered. Initialed copies are enclosed.

Election/Restrictions

3. Examiner accepts Applicant's request for clarification on claims. Pending and examined are claims 1-2, 12, 14, 16-17, 22, 24, 26-27, 44, 49, 66-67, 97-98 and 100.

Double Patenting Rejection Maintained

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 49 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Application No. 11/361,313 is maintained is maintained for the reason set forth in the previous office action.

Examiner accepts Applicant's remarks that respectfully requests that this rejection be held in abeyance since the co-pending claim has not yet been allowed. Applicant notes that the instant claims have an earlier priority date. If in fact a double patenting rejection is appropriate, which applicant does not agree with, the earlier filed claims should be allowed and the rejection should be made in the later filed application.

Claim Rejection Maintained - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The rejection of claims 1-2, 12, 14, 16-17, 22, 24, 26-27, 49, 66-67, 97-98, and 100 under 35 U.S.C. 102(b) as being anticipated by Krieg et al WO/01/22972A2.

Applicant arguments:

Initially, it is noted that much of the rejection presented in the Office Action under 102(b) appears in fact to cite the instant application, not the cited reference. Specifically, Applicant calls to the Examiner's attention that the first full paragraph on page 5 of the Office Action, beginning as "Krieg et al teaches..." actually quotes from the specification

of the instant application, although provided as support for anticipation. Similarly, the paragraph immediately following the aforementioned paragraph (i.e., first full paragraph on page 6), also refers to the instant application, including the cited page numbers. Furthermore, the last paragraph of the Claim Rejections Section on page 8 also describes the instant invention, not the cited reference. The fact that the instant invention and the PCT publication cited by the Examiner under 102(b) share a common inventor, Krieg, may have contributed to the error. Notwithstanding, Applicant's arguments are presented below to assert that Krieg et al. does not anticipate the invention of the instant application.

Krieg et al. does not anticipate the claimed invention because the cited reference does not teach each element of the instant claims. Instant claim 1 is drawn to an immunostimulatory nucleic acid molecule having at least one internal pyrimidine-purine (YZ) dinucleotide and a chimeric backbone, wherein the at least one internal ¥Z dinucleotide has a phosphodiester or phosphodiester-like internucleotide linkage, wherein optionally each additional internal YZ dinucleotide has a phosphodiester, phosphodiester-like, or stabilized internucleotide linkage, and wherein all other internucleotide linkages are stabilized.

An important finding of the instant invention relates to the discovery that a phosphodiester or phosphodiester like internucleotide linkage can be present between the C and G of the CpG motif without causing a significant loss in activity. At the time of the invention it was believed phosphorothioate stabilized oligonucleotides were more stable than phosphodiester oligonucleotides. Further it was expected that placing a phosphodiester internucleotide linkage between the C and G in the CpG motif of an oligonucleotide might reduce the activity of an immunostimulatory oligonucleotide because it was believed that the oligonucleotide might be more susceptible to breakage at the phosphodiester linkage between the C and G nucleotides, producing smaller oligonucleotides without a CpG motif. Surprisingly, however, it was discovered that placing a phosphodiester (also referred to as a soft linkage) between the C and G in an otherwise phosphorothioate oligonucleotide did not result in a loss of activity. In some instances better "phosphorothioate ODN" including ODN 2102, which has the sequence

of SEQ ID NO:343 as noted above. Therefore, this oligonucleotide, as disclosed in Krieg et al., does not include each and every limitation of the instant claims and thus does not anticipate instant claims 66 and 100.

As noted earlier, Applicant respectfully contends that the last paragraph under Claim Rejections (page 8) also describes limitations of the instant invention, not the cited Krieg et al. reference. Applicant is not aware of a teaching in Krieg et al. that anticipates claims 66, 97, 98 and 100.

Examiner's Response to Arguments

Examiner accepts Applicant's argument. However Examiner disagrees, the prior art reference teaches the limitations of the claims. The claimed invention is drawn to an immunostimulatory nucleic acid molecule having at least one internal pyrimidine-purine (YZ) dinucleotide and a chimeric backbone, wherein the at least one internal YZ dinucleotide has a phosphodiester or phosphodiester-like internucleotide linkage, wherein optionally each additional internal YZ dinucleotide has a phosphodiester, phosphodiester-like, or stabilized internucleotide linkage, and wherein all other internucleotide linkages are stabilized.

Therefore, Krieg et al (prior art reference is refered to whenever Krieg et al is stated in the Argument) teach, immunostimulatory oligonucleotides which have chimeric backbones and which do not require the presence of a CpG motif. However Krieg et al teach that the invention in one aspect relates to a composition of an oligonucleotide having a formula: 5'Y1N1ZNZY2 3', wherein Yl and Y2 are, independent of one another, nucleic acid molecules having between 1 and 10 nucleotides, wherein Y1 includes at least one modified internucleotide linkage and Y2 includes at least one modified internucleotide linkage and wherein Ni and N2 are nucleic acid molecules, each independent of one another, having between 0 and 5 nucleotides, but wherein NI ZN2 has at least 6 nucleotides in total and wherein the nucleotides of ZN2 have a phosphodiester backbone, wherein Z is a nucleic acid sequence selected from the group consisting of TTTT, TG, and a sequence wherein at least 50% of the bases of the sequence are Ts. Krieg et al teaches that in some embodiments Yl and/or Y2 have between 3 and 8 nucleotides. In other embodiments Yl and/or Y2 are comprised of at

least three Gs, at least four Gs, least seven Gs, or all Gs. In other embodiments Y and/or Y2 are selected from the group consisting of TCGTCG, TCGTCGT, and TCGTCGTT (SEQ ID NO : 1145). In yet other embodiments Yl and/or Y2 include at least one, two, three, four, or five poly-A, poly-T, or poly-C sequences. Krieg et al further teach that center nucleotides (NlZN2) of the formula YINIZN2y2 have phosphodiester internucleotide linkages and Y and Y2 have at least one modified internucleotide linkage. In some embodiments Yl and/or Y2 have at least two modified internucleotide linkages. In other embodiments Yl and/or Y2 have between two and five modified internucleotide linkages. In yet other embodiments Yl has two modified internucleotide linkages and Y2 has five modified internucleotide linkages or Yl has five modified internucleotide linkages and Y2 has two modified internucleotide linkages. The modified internucleotide linkage, in some embodiments is a phosphorothioate modified linkage or phosphorodithioate modified linkage. Krieg et al teaches a composition of a sustained release device including an immunostimulatory oligonucleotide having the formula YIN1ZN2Y2, is provided according to another aspect of the invention (see abstract, pgs. 2-12, pgs. 18-24, pgs. 27-30, pg. 34, pgs. 36-37).

Krieg et al teach that the invention also includes nutritional supplements of an immunostimulatory oligonucleotide having the formula YlNlZN2Y2, in a delivery device. Krieg et al further teach that in another aspect the compositions described above also include an immunostimulatory nucleic acid having an unmethylated CG dinucleotide, a TG dinucleotide or a Py-rich sequence wherein the immunostimulatory nucleic acid having an unmethylated CG dinucleotide, a TG dinucleotide or a Py-rich sequence has a different sequence than the oligonucleotide comprising 5'Y, N, ZN2Y2 3.

Krieg et al teach that in some embodiments the immunostimulatory nucleic acid having an unmethylated CG dinucleotide, a TG dinucleotide or a Py-rich sequence has a completely phosphodiester backbone and in other embodiments the immunostimulatory nucleic acid having an unmethylated CG dinucleotide, a TG dinucleotide or a Py-rich sequence has a modified backbone, which optionally may have internucleotide linkages selected from the group consisting of phosphorothioate, phosphorodithioate, and p- ethoxy.

Krieg et al teach that in one embodiment immunostimulatory nucleic acid having an unmethylated CG dinucleotide has a formula comprising: 5'XxX2CGX3X4 3 wherein X1, X2, X3 and X4 are nucleotides. In other embodiments the immunostimulatory nucleic acid sequence includes at least the following formula: 5'TCNTXlX2CGX3X4 3'wherein N is a nucleic acid sequence composed of from about 0-25 nucleotides, wherein at least one nucleotide has a modified internucleotide linkage, and wherein the nucleic acid has less than or equal to 100 nucleotides. According to some embodiments XlX2 are nucleotides selected from the group consisting of : GT, GG, GA and AA and X3X4 are nucleotides selected from the group consisting of : TT, CT or GT. In a preferred embodiment X ; X2 are GA and X3X4 are TT. Furthermore the SEQ ID NO. 313 was elected in the restriction on 8/2/2006. Krieg et al teach SEQ ID NO. 313 (see abstract, pgs. 2-12, pgs. 18-24, pgs. 27-30, pg. 34, pgs. 36-37) and (STIC Sequence Search Results SEQ ID NO: 331). Therefore claims 66, 97, 98, and 100 are examined however only elected SEQ ID NO: 313 is searched thus species of claims 66, 97, and 98 are examined without SEQ. Furthermore Krieg et al teach claims 66, 97, and 98 and the limitations have been met. (see see abstract, pgs. 2-12, pgs. 18-24, pgs. 27-30, pg. 34, pgs. 36-37).

Therefore the limitations have been met and maintained for the reason set forth in the previous office action.

As outlined previously, the instant claims are to drawn an immunostimulatory nucleic acid molecule having at least one internal pyrimidine-purine (YZ) dinucleotide and a chimeric backbone, wherein the at least one internal YZ dinucleotide has a phosphodiester or phosphodiester-like internucleotide linkage, wherein optionally each additional internal YZ dinucleotide has a phosphodiester, phosphodiester-like, or stabilized internucleotide linkage, and wherein all other internucleotide linkages are stabilized (claim 1); an oligonucleotide comprising an octameric sequence comprising at least one YZ dinucleotide having a phosphodiester or phosphodiester-like internucleotide linkage, and at least 4 T nucleotides, wherein Y is a pyrimidine or modified pyrimidine, wherein Z is a guanosine or modified guanosine, and wherein the

oligonucleotide includes at least one stabilized internucleotide linkage (claim 49); an oligonucleotide comprising 5'GNC 3', wherein N is a nucleic aid sequence of 4-10 nucleotides in length and is at least 50% T and does not include a CG dinucleotide, and the oligonucleotide includes at least one stabilized internucleotide linkage (claim 67); an oligonucleotide comprising N_1-C_G-N_2-C_G-N_3 wherein N_1 and N_3 are each independently a nucleic acid sequence 1-20 nucleotides in length, wherein _ indicates an internal phosphodiester or phosphodiester-like internucleotide linkage, wherein N2 is independently a nucleic acid sequence 4-20 nucleotides in length, and wherein G-N_2-C includes at least 5 stabilized linkages (claim 97); an oligonucleotide comprising N_1-C_G-N_2-C_G-$N_3$3 wherein N_1, N_2, and N_3 are each independently a nucleic acid sequence of 0-20 nucleotides in length and wherein _ indicates an internal phosphodiester or phosphodiester-like internucleotide linkage, wherein the oligonucleotide is not an antisense oligonucleotide, triple-helix-forming oligonucleotide, or ribozyme (claim 98).

Krieg et al teaches an immunostimulatory nucleic acid molecule having at least one internal pyrimidine-purine (YZ) dinucleotide and a chimeric backbone, wherein the at least one internal YZ dinucleotide has a phosphodiester or phosphodiester-like internucleotide linkage, wherein optionally each additional internal YZ dinucleotide has a phosphodiester, phosphodiester-like, or stabilized internucleotide linkage, and wherein all other internucleotide linkages are stabilized, wherein the immunostimulatory nucleic acid comprises a plurality of internal YG dinucleotides having a phosphodiester or phosphodiester-like internucleotide linkage, wherein the at least one internal YG dinucleotide having a phosphodiester or phosphodiester-like internucleotide linkage is CG, wherein the immunostimulatory nucleic acid molecule is a B-Class immunostimulatory nucleic acid molecule, wherein the immunostimulatory nucleic acid molecule is 4-100 nucleotides long, wherein the immunostimulatory nucleic acid molecule is not an antisense oligonucleotide, triple-helix-forming oligonucleotide, or ribozyme, wherein the nucleic acid has a backbone comprising deoxyribose or ribose, wherein the phosphodiester or phosphodiester-like internucleotide linkage is phosphodiester, wherein the stabilized internucleotide linkages are selected from the

group consisting of: phosphorothioate, phosphorodithioate, methylphosphonate, methylphosphorothioate, and any combination thereof, wherein the stabilized internucleotide linkages are phosphorothioate (see abstract, pgs. 2-12, pgs. 18-24, pgs. 27-30, pg. 34, pgs. 36-37).

Krieg et al teaches an oligonucleotide comprising an octameric sequence comprising at least one YZ dinucleotide having a phosphodiester or phosphodiester-like internucleotide linkage, and at least 4 T nucleotides, wherein Y is a pyrimidine or modified pyrimidine, wherein Z is a guanosine or modified guanosine, and wherein the oligonucleotide includes at least one stabilized internucleotide linkage. Krieg et al teaches an oligonucleotide comprising 5'GNC 3', wherein N is a nucleic aid sequence of 4-10 nucleotides in length and is at least 50% T and does not include a CG dinucleotide, and the oligonucleotide includes at least one stabilized internucleotide linkage. Krieg et al teaches an oligonucleotide comprising N_1-C_G-N_2-C_G-N_3 wherein N_1 and N_3 are each independently a nucleic acid sequence 1-20 nucleotides in length, wherein _ indicates an internal phosphodiester or phosphodiester-like internucleotide linkage, wherein N2 is independently a nucleic acid sequence 4-20 nucleotides in length, and wherein G-N_2-C includes at least 5 stabilized linkages. Krieg et al teaches an oligonucleotide comprising N_1-C_G-N_2-C_G-$N_3$3 wherein N_1, N_2, and N_3 are each independently a nucleic acid sequence of 0-20 nucleotides in length and wherein _ indicates an internal phosphodiester or phosphodiester-like internucleotide linkage, wherein the oligonucleotide is not an antisense oligonucleotide, triple-helix-forming oligonucleotide, or ribozyme (see abstract, pgs. 2-12, pgs. 18-24, pgs. 27-30, pg. 34, pgs. 36-37).

Krieg et al teaches that the immunostimulatory nucleic acid may be any size (i. e., length) provided it is at least 4 nucleotides, in important embodiments; the immunostimulatory nucleic acids have a length in the range of between 6 and 100. In still other embodiments, the length is in the range of between 8 and 35 nucleotides. Preferably, the TG oligonucleotides range in size from 15 to 25 nucleotides. Krieg et al teaches the size (i. e., the number of nucleotide residues along the length of the nucleic

acid) of the immunostimulatory nucleic acid may also contribute to the stimulatory activity of the nucleic acid. Krieg et al teach that it has been discovered, surprisingly that even for highly immune stimulating immunostimulatory nucleic acids, the length of the nucleic acid influences the extent of immunostimulation that can be achieved and it has been demonstrated that increasing the length of a T-rich nucleic acid up to 24 nucleotides causes increased immune stimulation. Krieg et al teaches that the experiments presented in the examples demonstrate that when the length of the T-rich nucleic acid is increased from 18 to 27 nucleotides the ability of the nucleic acid to stimulate an immune response is increased significantly (compare ODN #2194, 2183,2195, and 2196 decreasing in size from 27-18 nucleotides). Krieg et al teaches that that increasing the length of the nucleic acid up to 30 nucleotides had a dramatic impact on the biological properties of the nucleic acid but increasing the length beyond 30 nucleotides did not appear to further influence the immune stimulatory effect (e. g., compare ODN 2179 to 2006).

Krieg et al teach that TG nucleic acids ranging in length from 15 to 25 nucleotides in length may exhibit an increased immune stimulation thus, in one aspect, the invention provides an oligonucleotide that is 15-27 nucleotides in length (i. e., an oligonucleotide that is 15,16,17,18,19,20,21,22,23,24,25,26 or 27 nucleotides in length) that may be a T-rich nucleic acid or may be a TG nucleic acid, or may be both a T-rich and a TG nucleic acid. In one embodiment, the oligonucleotide is not a T-rich nucleic acid nor is it a TG nucleic acid. In other embodiments, the oligonucleotide does not have a CG motif. Krieg et al teach that the invention similarly provides oligonucleotides that are 15-27 nucleotides in length, oligonucleotides that are 18-25 nucleotides in length, oligonucleotides that are 20-23 nucleotides in length, and oligonucleotides that are 23- 25 nucleotides in length and any of the foregoing embodiments relating to oligonucleotides 15-27 in length also relate to the oligonucleotides of these differing lengh.

Krieg et al teach that for facilitating uptake into cells immunostimulatory nucleic acids preferably have a minimum length of 6 nucleotide residues. Krieg et al teach that

nucleic acids of any size greater than 6 nucleotides (even many kb long) are capable of inducing an immune response according to the invention if sufficient immunostimulatory motifs are present, since larger nucleic acids are degraded inside of cells and preferably the immunostimulatory nucleic acids are in the range of between 8 and 100 and in some embodiments T-rich containing immunostimulatory nucleic acids are between 24 and 40 nucleotides in length and TG containing immunostimulatory nucleic acids are between 15 and 25 nucleotides in length (see abstract, pgs. 2-12, pgs. 18-24, pgs. 27-30, pg. 34, pgs. 36-37).

Krieg et al teaches an olignucleotide comprising an oligonucleotide comprising: 5'T*C_G(N_6C_G N_7)$_{2-3}$T*C_G*T*T3' wherein N_6 and N_7 are independently between 1 and 5 nucleotides in length, and optionally N_6 is one nucleotide, preferably T or A and optionally N_7 is five nucleotides, preferably five pyrimidines or TTTTG wherein * refers to the presence of a stabilized internucleotide linkage, and wherein _ refers to the presence of a phosphodiester internucleotide linkage and wherein the oligonucleotide has a length of 16-40 nucleotides, wherein the oligonucleotide has the following structure: 5' T*C G*T*C G*T*T*T*T*G*A*C G*T*T*T*T*G*T*C 'G*T*T 3' (SEQ ID NO: 313) (see abstract, pgs. 2-12, pgs. 18-24, pgs. 27-30, pg. 34, pgs. 36-37).
STIC Sequence Search Results SEQ ID NO: 331).

Status of the Claims

7. No claims are allowed.

Claims 1-2, 12, 14, 16-17, 22, 24, 26-27, 49, 66-67, 97-98, and 100 are rejected.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nina A. Archie whose telephone number is 571-272-9938. The examiner can normally be reached on Monday-Friday 8:30-5:00p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Shanon Foley can be reached on 571-272-0898. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nina A Archie
Examiner
GAU 1645
REM 3B31

/Mark Navarro/
Primary Examiner, Art Unit 1645